CLAIMS:

1. A knowledge integration system for providing application interoperability and synchronization between heterogeneous document and data sources, comprising:

a first database memory;

a data source suitable for independently performing data analysis operations using data stored within the first database to generate data and analysis results;

a document source, including a document database memory, for capturing knowledge and storing the knowledge in the form of documents, validating the accuracy of the knowledge, and making the captured knowledge available across a network; and

a knowledge integration application, running on a client/server system having access to the data source and the document source, for managing the flow of information between the data source and the document source, thereby enabling the integration of data and analysis results with the documents and provide links to automatically update the documents upon a change in the data or analysis results.

2. The knowledge integration system of claim 1, wherein the knowledge integration application generates an audit trail to represent the flow of data.

3. The knowledge integration system of claim 1, wherein the knowledge integration application allows the versioning of data and analysis results, and the selection of a version for subsequent use.

4. The knowledge integration system of claim 1, wherein the knowledge integration application provides live linkages between data source objects and documents associated therewith.

5. The knowledge integration system of claim 1, further comprising a knowledge base that dynamically stores information about integration transactions.

6. The knowledge integration system of claim 5, wherein the information about integration transaction includes historical information characterizing the method of creation, the author and the completion date.

7. The knowledge integration system of claim 5, wherein the knowledge integration application, in response to information stored in the knowledge bank, automatically signals the initiation of work flow events as a part of the integration transaction.

8. The knowledge integration system of claim 6, wherein the information about integration transaction is displayed in a three-dimensional manner for a user.

9. A method for providing application interoperability and synchronization between heterogeneous document and data sources, comprising the steps of:

storing data in a first database memory;

performing data analysis operations using the data stored in the first database to generate data and analysis results;

independently storing knowledge, in the form of documents, in a document database, including validating the accuracy of the knowledge and making the stored knowledge available across a network;

managing the flow of information between the first database and the document database to enable the integration of the data and analysis results with the documents and to automatically update the documents upon the occurrence of a change in the data or analysis results.

10. The method of claim 9 further comprising embedding and executing "live" knowledge links stored in said documents and associated analysis data thereby allowing users to define and execute multiple tasks to be performed by one or more data or document applications within information content.

11. The method of claim 10 further comprising visualizing objects and linkages maintained in said first database and said document database, using a 3D interface and conceptual schema for access and manipulation of the enterprise information.

12. A knowledge integration system, comprising:

an application integration module for providing application interoperability and synchronization between heterogeneous document and data sources; and

a knowledge integration module for facilitating archiving of knowledge-related context and providing the ability to access and assess past, present and potential decisions, infrastructural setup, structuring processes, practices, and applications and the interactions between them.

13. The system of claim 12, further comprising:

a database memory for archiving of knowledge-related context, past, present and potential decisions, infrastructural setup, structuring processes, and practices.

14. The system of claim 13 further comprising a data source suitable for independently performing data analysis operations using data stored within said database to generate data and analysis results; and

a document source, including a document database memory, for capturing knowledge and storing the knowledge in the form of documents, validating the accuracy of the knowledge, and making the captured knowledge available across a network.

15. The system of claim 14 wherein said knowledge integration module further comprises a knowledge integration application, running on a client/server system having access to the data source and the document source, for managing the flow of information between the data source and the document source, thereby enabling the integration of data and analysis results with the documents and provide links to automatically update the documents upon a change in the data or analysis results.

16. A knowledge integration system for providing application interoperability and synchronization between heterogeneous document and data sources, comprising:

a computer programmed for the utilization of knowledge integration middleware in conjunction with traditional application integration middleware to build and manage an integration knowledge repository;

a mechanism for bridging structured and unstructured data with uniform access to information;

integrated knowledge-based software applications that collectively enable information integration with knowledge linkage, visualization and utilization of structured, unstructured and work practice data and metadata produced by knowledge workers in an enterprise; and

a knowledge repository containing record of integration transactions, context information from users and applications, information metadata catalog, knowledge access control, application activation rules, metadata and rules for knowledge integration, knowledge generation, knowledge visualization, "live" knowledge links, task execution, and case-based data for regulatory review.

17. The system of claim 16 further comprising a three dimensional (3D) interface in conjunction with a user-specific conceptual schema providing access to enterprise information wherever it is stored and managed.

18.　A method of providing application interoperability and synchronization between heterogeneous document and data sources such as those currently managed by disparate enterprise document management and data analysis systems, comprising:

establishing and utilizing "live" links between an enterprise document management system and a statistical database;

enabling users to define and execute multiple tasks to be performed by one or more applications from anywhere within a document where the flow of textual and numerical analysis information are systematically synchronized;

automating the process of transferring data analysis reports to a document management system for document production, synchronize information flow between data and documents, and provide linkages back to data analysis software.

19.　The method of claim 18 further comprising embedding and executing "live" knowledge links stored in documents and associated analysis data thereby allowing users to define and execute multiple tasks to be performed by one or more data or document applications within information content.

20.　The method of claim 19 further comprising visualizing objects and linkages maintained in the integration knowledge base, using a 3D interface and conceptual schema for access and manipulation of the enterprise information.